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Congenital Heart Disease

BLOOD-PRESSURE REDUCTION IS ASSOCIATED WITH WORSENING IN RENAL FUNCTION BUT DOES NOT PREVENT SUCCESSFUL DECONGESTION IN PATIENTS TREATED FOR ACUTE DECOMPENSATED HEART FAILURE

Poster Contributions
Hall C
Sunday, March 30, 2014, 9:45 a.m.-10:30 a.m.

Session Title: Heart Failure and Cardiomyopathies: Challenge of Acute Decompensated Heart Failure
Abstract Category: 12. Heart Failure and Cardiomyopathies: Clinical
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Background: Recent data have demonstrated that substantial reductions in blood pressure are common during the treatment of acute decompensated heart failure (ADHF) and are associated with worsening renal function (WRF). However, since the kidney serves as the primary conduit by which fluid and sodium is removed, it is possible that the reduction in blood pressure secondary to factors such as routine titration of vasodilators and neurohormonal antagonists during the treatment of ADHF could limit successful decongestion. Our aim was to investigate whether a decline in systolic blood pressure (SBP), and the associated deterioration in renal function, might limit successful diuresis.

Methods: We analyzed consecutive admissions with a primary discharge diagnosis of HF at a single center (n=657) and determined the change in SBP from the admission to discharge. WRF was defined as a ≥20% reduction in estimated glomerular filtration rate (eGFR).

Results: Overall 77.5% of the population had a discharge SBP lower than the admission value. Reduction in SBP and deterioration in eGFR were significantly correlated (r=0.27, p<0.0001), and in patients with a relative reduction in SBP above the median (9.9% relative reduction in SBP), WRF was significantly more common (OR= 1.9, p=0.004). Despite the negative association with renal function, SBP reduction was not associated with a lower total fluid output (p=0.293), average daily fluid output (p=0.306), or longer length of stay (p=0.249). There was no correlation between change in blood pressure and net fluid loss (r=0.01, p=0.77) or % change in eGFR and fluid loss (r=0.03, p=0.39). The similar diuresis achieved between groups was not at the expense of higher doses of loop diuretics (p=0.77), use of loop diuretic infusions (p=0.86), or the use of adjuvant thiazide diuretics (p=0.73). Furthermore, the rate of hemoconcentration was not different between patients with a SBP reduction above or below the median (p=0.238). Even amongst those who developed WRF in the context of a SBP reduction, fluid output was similar (p=0.174).

Conclusion: Despite apparent negative effects on renal function, a reduction in blood pressure did not appear to limit successful decongestion.